SZABO SCANDIC

Part of Europa Biosite

Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Cell-Free DNA BCT®

STRECK

INSTRUCTIONS FOR USE
For In Vitro Diagnostic Use

INTENDED USE
Cell-Free DNA BCT is a direct-draw venous whole blood collection device intended for the collection, stabilization, and transport of venous whole blood samples for use in conjunction with cell-free DNA next- generation sequencing liquid biopsy assays that have been cleared or approved for use with samples collected in the Cell-Free DNA BCT device.

SUMMARY AND PRINCIPLES
Accurate analysis of cell-free DNA can be compromised by sample handling, shipping and processing, causing lysis of nucleated blood cells and subsequent release of cellular genomic DNA.

The preservative reagent contained in Cell-Free DNA BCT reduces the release of cellular genomic DNA. This claim has been substantiated compared to cfDNA isolated from K_2EDTA tubes for liquid biopsy next-generation sequencing assays.

The blood collection tube is intended for the preservation of cell-free DNA.

REAGENTS
Cell-Free DNA BCT contains the anticoagulant K_3EDTA and a cell preservative in a liquid medium.

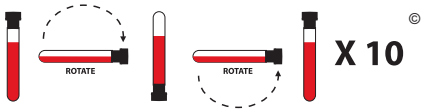
LIMITATIONS
1. Performance characteristics for this device have only been established on the Guardant360 CDx assay.
2. Do not store outside of established conditions.
3. Do not transfer samples drawn into tubes containing other anti-coagulants and/or preservatives into Cell-Free DNA BCT
4. Do not use past expiration date printed on label.
5. Do not use for clinical chemistry assays or assays other than liquid biopsy next-generation sequencing.
6. Do not use for collection of materials to be injected into patients.
7. Cell-Free DNA BCT is not intended for the stabilization of RNA nor is it intended for viral or microbial nucleic acids.

PRECAUTIONS
1. Do not freeze specimens collected in Cell-Free DNA BCT.
2. For single use only.
3. Product is intended for use as supplied. Do not dilute or add other components to Cell-Free DNA BCT.
4. Specimen transport via pneumatic tube system is not advised.
5. Allow the tube to fill completely until blood stops flowing into the tube. Underfilling of tubes with less than 5ml of blood (bottom of the label indicates 5ml fill when tube is held vertically) may lead to incorrect analytical results or poor product performance. This tube has been designed to fill with 10ml of blood.
   CAUTION
   a. Glass has the potential for breakage; precautionary measures should be taken during handling of glass tubes.
   b. All biological specimens and materials coming in contact with them are considered biohazards and should be treated as if capable of transmitting infection. Dispose of in accordance with federal, state and local regulations. Avoid contact with skin and mucous membranes.
   c. Product should be disposed with infectious medical waste.
   d. Remove and reinsert stopper by either gently rocking the stopper from side to side or by grasping with a simultaneous twisting and pulling action. A "thumb roll" procedure for stopper removal is NOT recommended as tube breakage and injury may result.
6. SDS can be obtained at streck.com or by calling 800-843-0912.

STORAGE AND STABILITY
1. Store tubes prior to blood draw at 2 °C to 30 °C until expiration date printed on label.
2. Do not freeze Cell-Free DNA BCT.
3. After draw, whole blood containing Cell-Free DNA BCT should be stored at 18 °C to 25 °C for up to 7 days total, including shipping.

INDICATIONS OF PRODUCT DETERIORATION
1. Cloudiness or precipitate visible in reagent of empty tube.
2. If indications of product deterioration occur, contact Streck Technical Services at 800-843-0912 or technicalservices@streck.com.

INSTRUCTIONS FOR USE
For a video demonstration, visit streck.com/mixing.
1. Collect specimen by venipuncture according to CLSI GP41[1].
   Prevention of Backflow - Since Cell-Free DNA BCT contains chemical additives, it is important to avoid possible backflow from the tube.
   To guard against backflow, observe the following precautions:
   a. Keep patient's arm in the downward position during the collection procedure.
   b. Hold the tube with the stopper in the uppermost position so that the tube contents do not touch the stopper or the end of the needle during sample collection.
   c. Release tourniquet once blood starts to flow in the tube, or within 2 minutes of application.
2. Follow recommendations for order of draw outlined in CLSI GP41[1]. Cell-Free DNA BCT should be drawn after the EDTA tube and before the fluoride oxalate (glycolytic inhibitor) tube. If a Cell-Free DNA BCT tube immediately follows a heparin tube in the draw order, Streck recommends collecting a non-additive or EDTA tube as a waste tube prior to collection in the Cell-Free DNA BCT.
3. Fill tube completely.
4. Remove tube from adapter and immediately mix by gentle inversion 10 times. Inadequate or delayed mixing may result in incorrect analytical results or poor product performance. One inversion is a complete turn of the wrist, 180 degrees, and back per the figure below:



5. After collection, transport and store tubes within the recommended temperature range.

Note:
1. For best results, a 21G or 22G needle is advised. Slower fill times may be observed when using a smaller gauge needle.
2. When using a winged (butterfly) collection set for venipuncture and the Streck Cell-Free DNA BCT is the first tube drawn, a non-additive or EDTA discard tube should be partially drawn first in order to eliminate air or "dead space" from the tubing.
3. Cell-Free DNA BCT does not dilute blood samples; therefore, no dilution factor correction is necessary.

PLASMA ISOLATION
1. Centrifuge blood collection tubes containing whole blood for 10 minutes at 10 °C at 1,600 x g. Carefully unload the tubes from the centrifuge without disturbing the buffy coat .
2. Pipette maximum 5ml plasma from the specimen tube to a labeled 15ml centrifuge tube.
3. Centrifuge plasma in 15ml centrifuge tube for 10 minutes at 10 °C at 3,220 x g. Note: Centrifuge speed may be adjusted down to 3,200 x g, if centrifuge does not support 3,220 x g.
4. Pour contents of 15ml centrifuge tube for each specimen into an appropriately labeled 5ml conical screw cap tube.
5. Isolate cell-free DNA using extraction kit manufacturer's instructions including any adaptations as required.

Note: The conditions described above were used to collect the performance data reported below.

PLASMA Storage
1. Plasma may be stored at 2 °C to 8 °C for up to 24 hours or at -80 °C +/- 10 °C for up to 45 days. This has only been validated on the Guardant360 CDx assay.

Performance Characteristics

1. Suitabiity of cfDNA isolated from Cell-Free DNA BCT for NGS liquid biopsy assays

Evaluations of the Cell-Free DNA BCT have been performed for use with Guardant360 CDx. Fifty-nine donors had whole blood collected in both Cell-Free DNA BCT and K_2EDTA tubes and were analyzed on Guardant360 CDx. The performance of the Cell-Free DNA BCT was assessed relative to an K_2EDTA tube control for variant detection by Guardant360 CDx (Table 1). When considering only variants above the limit of detection, the PPA was 100% (32/32). The data demonstrate acceptable accuracy of the tubes when used with Guardant360 CDx.

Table 1. Accuracy Study Results

	Cell-Free DNA BCT +	Cell-Free DNA BCT -	Total
K_2EDTA Tube +	36	4	40
K_2EDTA Tube -	6	2,589,898	2,589,904
Total	42	2,589,902	2,589,944
PPA (95% CI)	90.0% (76.3%,97.2%)		
NPA (95% CI)	99.9998% (99.9995%,99.9999%)		

2. Reproducibility and Repeatability

Lot-to-lot reproducibility was assessed in an isosynchronous shelf life stability study, where 28 donors provided N=4 samples across three lots, two in the youngest lot (3 months: R1 and R2), and 1 each in the older lots (9.2 months and 19.2 months). APA was 100% in the inter-lot comparisons in Table 2, and 90% for within lot (APA defined as #concordant/(#concordant + 0.5 * #discordant)).

Table 2. Reproducibility of Variant Detection Study Results

Lot Pair	APA [95% CI]	ANA [95% CI]
Lot 1 (R1) vs. Lot 1 (R2)	90% (8/10) [51.8%,99.7%]	99.99992% [99.99955%, 100%]
Lot 1 (R1) vs. Lot 2	100% (9/9) [66.4%,100%]	100% [99.9997%, 100%]
Lot 1 (R1) vs. Lot 3	100% (9/9) [66.4%,100%]	100% [99.9997%, 100%]
Lot 2 vs. Lot 3	100% (9/9) [66.4%,100%]	100% [99.9997%, 100%]

Note: 95% Clopper Pearson confidence interval; R1: Replicate 1; R2: Replicate 2

*APA reported for those variants above the LOD

The repeatability study was conducted using four tubes from each of 33 patients, and the variant calls compared within each patient across tubes. Of the 37 variants detected above LoD, 32 were 100% concordant across tubes, while 5 variants were observed to have at least one dropout. APA and ANA are shown in Table 3.

Table 3. Repeatability of Variant Detection Study Results

Number of Patients	APA	ANA (panel-wide)
33	95.65%	99.9998%

*APA report for those variants above the LOD

Based on the data obtained in the reproducibility and repeatability study data, the tubes exhibit acceptable precision when run on Guardant360 CDx.

3. Product stability – Shelf Life Study

Product shelf life was evaluated by storing 3 lots of unused tubes at both 2 °C and 30 °C for 0, 3, 7, 12, and18 months. One lot was exposed to simulated shipping conditions. Whole blood was collected and cfDNA was extracted using the QIAsymphony SP system on either one or 8 days after collection at room temperature. Variant detection on Guardant360 CDx was assessed for samples from day 1 and 8 and concordance was analyzed (Table 4). The data demonstrates a high concordance in variant detection (≥ 1xLoD) between blood analyzed on day 1 vs. day 8 and support a product shelf life at up to 18 months at 2 °C to 30 °C.

Table 4. Tube Stability Study Results

Time point (months)	Number of Paired Samples Collected per Lot	APAt	ANA (panel-wide)
0	20	100.0% (8/8)	100%
3	10	100.0% (7/7)	100%
7	10	90.9% (5/6)	99.9999%
12	10	100.0% (5/5)	100%
18	10	97.1% (17/18	99.9999%

4. Sample Stability – Whole Blood Storage in Tube

Whole blood stability was conducted on samples stored for seven days at room temperature (18 °C to 25 °C) as compared to reference tubes (processed 1 day post collection). Four tubes were collected from each patient with one serving as a reference tube and the remaining 3 stored as outlined in Table 5. Samples were processed and analyzed using Guardant360 CDx for concordance of variant detection at or above the LoD. The data support storage of whole blood in the tube for up to 7 days at room temperature as well as when subjected to Summer Temperature and Winter Temperature conditions.

Table 5. Whole Blood Storage Study Conditions and Results

Storage Condition during Shipping	PPA [95% CI] (n=13)	NPA [95% CI]
Summer profile storage	100% [75.3%,100%]	99.9997% [99.9990%,100%]
Winter profile storage	100% [75.3%,100%]	99.9997% [99.9990%,100%]
Room temperature (18-25°C) storage	100% [75.3%,100%]	99.9995% [99.9986%,99.9999%]

5. Interference

Potentially interfering substances were added separately to the Cell-Free DNA BCT. The reference tube contained the normal preservative formulation, while the two conditions included elevated levels (2X) of either Reagent A or Reagent B used to formulate the tube preservative. The addition of these substances had little to no effect on Guardant360 CDx performance for concordance of variants detected at or above the LoD (Table 6) as compared to the acceptance criteria (PPA ≥ 85%, NPA ≥ 99.8%).

Table 6. Interfering Substances Study Results

Storage Condition	PPA [95% CI] (n=5)	NPA [95% CI]
Reagent A (2X)	100% [47.8%,100%]	99.9998% [99.9990%,100%]
Reagent B (2X)	100% [47.8%,100%]	99.9996% [99.9987%,100%]

6. Sample Handling – Mixing and Underfilling of Tubes

Robustness of performance from samples subjected to a range of handling conditions was tested Guardant360 CDx concordance with control tubes (i.e. normal preservative ratio or 10 inversions) (Table 7 and 8).

Table 7. Whole Blood Underfilling Conditions and Study Results

Test Condition	PPA [95% CI] (n=8)	NPA [95% CI]
Preservative (2X)	100% [63.1%,100%]	99.9995% [99.9985%,99.9999%]

Table 8. Whole Blood Mixing Conditions and Study Results

Test Condition	PPA [95% CI] (n=8)	NPA [95% CI]
Fewer inversions (5)	87.5% [47.3%,99.7%]	99.9992% [99.9980%,99.9998%]
More inversions (15)	87.5% [47.3%,99.7%]	99.9994% [99.9983%,99.9999%]

Inadequate (<10 inversions), delayed, or over mixing (>10 inversions) may result in incorrect analytical results or poor product performance.

REFERENCES

1. Clinical and Laboratory Standards Institute. GP41, Procedures for the collection of diagnostic blood specimens by venipuncture. Approved Standard - Seventh Edition.

ORDERING INFORMATION

Please call our Customer Service Department toll free 800-228-6090 for assistance. Additional information can be found online at streck.com.

Rx Only

GLOSSARY OF SYMBOLS

See streck.com/IFU/US

Streck
7002 S. 109 Street, La Vista, NE 68128 USA

350726
2020-07